

Forest Stewardship

Planning for Beauty and Enjoyment

Most private forest landowners consider scenic beauty to be a very important forest benefit. This publication presents a brief overview of scenic forest values and how they can be enhanced as you manage for other forestland objectives, such as wildlife, recreation, and timber. Incorporating aesthetics into your management planning can add to the enjoyment of your land in many ways.

And so I have slowly come to understand—that beauty has a thousand different faces . . . stark branches against a wintry sky . . . the rich fragrance of the damp woods . . . Beauty holds a thousand different faces toward the searching heart.

—Winston Abbott



All of us who are drawn to forests find delight in the simple beauty they possess. It is difficult to describe just what it is about them that resonates within us as beauty. It may be seeing a forested hillside aflame with fall color, a majestic oak branching toward the sky, or a sunlit spider web glistening with dew. Such scenes inspire us to pause and reflect on the natural beauty that surrounds us. As a forest landowner, you are in the unique position to directly enhance your property's aesthetic value through active forest management. By incorporating visual concerns into woodland management activities, you can increase your opportunities to enjoy natural beauty and minimize activities that may detract from your land's scenic value. As you work to enhance the scenic qualities of your land, you may grow to more fully appreciate the splendor and completeness of nature's ever-changing artistry.

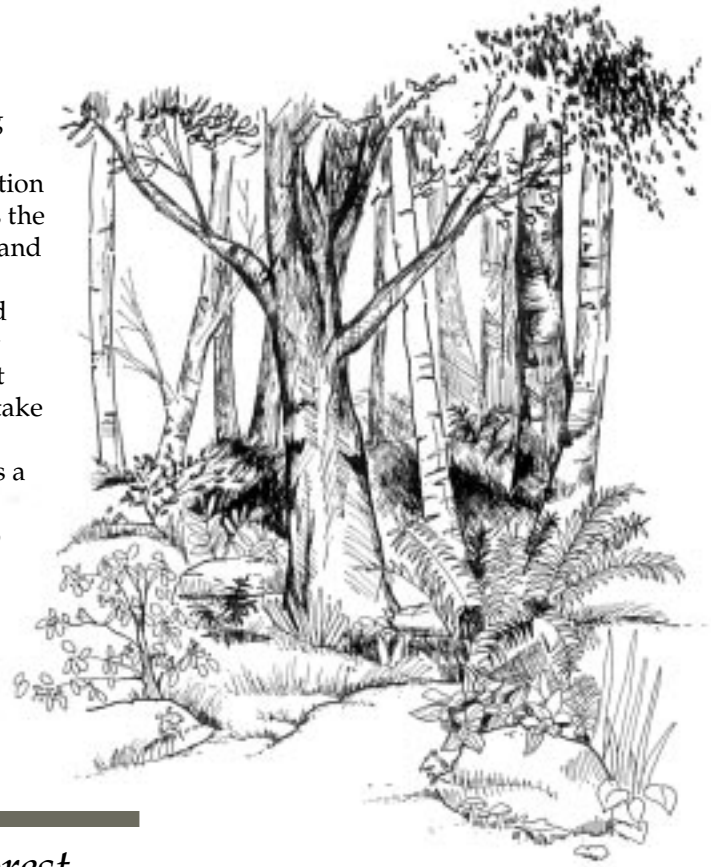
AESTHETICS AND FOREST OWNERSHIP

A forest's scenic value can provide many benefits. Simply being outdoors in the open air in a natural setting can be relaxing, meditative, invigorating, or even spiritual. The emotional and physical well-being that forests afford has some scientific basis. Medical studies show that green plants have a calming effect on people—blood pressure, heart rates, and breathing are lowered or reduced.

Spending time in the woods does more than just lower stress. Scenic wooded areas are excellent for hiking, biking, cross-country skiing, and other recreational pursuits. These activities are wonderful exercise and can be a regular part of a healthful lifestyle. An additional benefit of spending time in forests, either alone or with others, is the unlimited opportunity to see diverse and beautiful plants and animals first-hand. Seeing the first wildflowers of spring, hearing the musical calls of forest songbirds, crunching through fallen leaves on a brisk autumn day, drinking in the moist fragrance of pine—all these encounters keep us in contact with the natural world and can be both

educational and awe-inspiring. Simply walking through a healthy timber stand can renew appreciation for our forest resources as the source of many beautiful and useful wood products.

A responsibly managed and aesthetically pleasing woodlot is something that you and your family can take pride in. Perhaps your woodlot can even serve as a showcase of responsible management for others to learn from and enjoy. All of these aspects of aesthetics are important to keep in mind when making management decisions that affect your land.



Planning the Forest Landscape

Integrating forest management for scenic beauty and diversity can be viewed as landscaping on a grand scale. Just as you might consider the size, color, arrangement, and form of plants in your home or business landscape, so should you consider these factors when managing forestland. (The information in this section was adapted from North Carolina

Cooperative Extension Service's Woodland Owner Note, *Forest Stewardship: Planning for Beauty and Diversity*, prepared by Mark Megalos.)

DEFINING SCALE

Forestland can be viewed at two levels or scales at the same time—as a number of small microlandscapes or as one of a few macrolandscapes (Figure 1).



Figure 1. The peaks and valleys of this macrolandscape are composed of various microlandscapes, from the mixed hardwood stand in the foreground, across the watery basin, to the forested mountain in the background.

Microlandscapes are distinct areas within a forest that are usually visible from a single vantage point. For example, a dense pine stand, a shady oak grove, or the view of a hillside are all considered microlandscapes. Microlandscapes break up the forest's uniformity. Slight variations in light, tree density, and species composition characterize a forest and affect the way we view and appreciate the land.

Macrolandscapes, on the other hand, are primary landforms and their size, texture, contour, shape, and space. Macrolandscapes are fixed by natural formations and by the vegetative patterns established by land use. They should be managed carefully because they are usually visible from many vantage points. When reviewing your management options, you should consider topography. Does your land include mountainous terrain or large hills? If so, your management activities will be elevated and on display for all to see. Visual and spatial impacts should be incorporated into the planning process before any active management scheme is implemented.

One way to visualize various management outcomes is to make photocopies of panoramic photographs. With colored pencils, you can mark proposed clearings, access routes, and harvest areas on these copies (Figure 2). This inexpensive method can help you orient and plan openings on hilltops, ridges, and adjacent roadways before making final decisions. This process is a useful tool in balancing timber, wildlife, and recreation objectives with aesthetic concerns. In the next section we review how you can plan and carry out active forest management decisions.

AESTHETICS AND ACTIVE MANAGEMENT

While a hands-off management approach is sometimes a viable choice in forest planning, most management schemes involve removing various types or amounts of vegetation. Even unmanaged forests are always changing—trees die and are continuously replaced, and different species thrive and

decline as the forest matures. Cutting is a way of advancing or retarding these natural processes of death and renewal. Cutting can also be used as a tool to increase access to your woodlot, enhance habitat for certain wildlife species, or generate income through firewood removal or timber harvesting. There is no denying that a recently harvested area can be visually unappealing. But the tangle of limbs, branches, and leaves that remains after a harvest actually helps renew the forest. As the dead wood decays, nutrients cycle back into the soil and promote new growth. When a harvest is well planned and carefully implemented, the disturbed appearance doesn't last long. Once

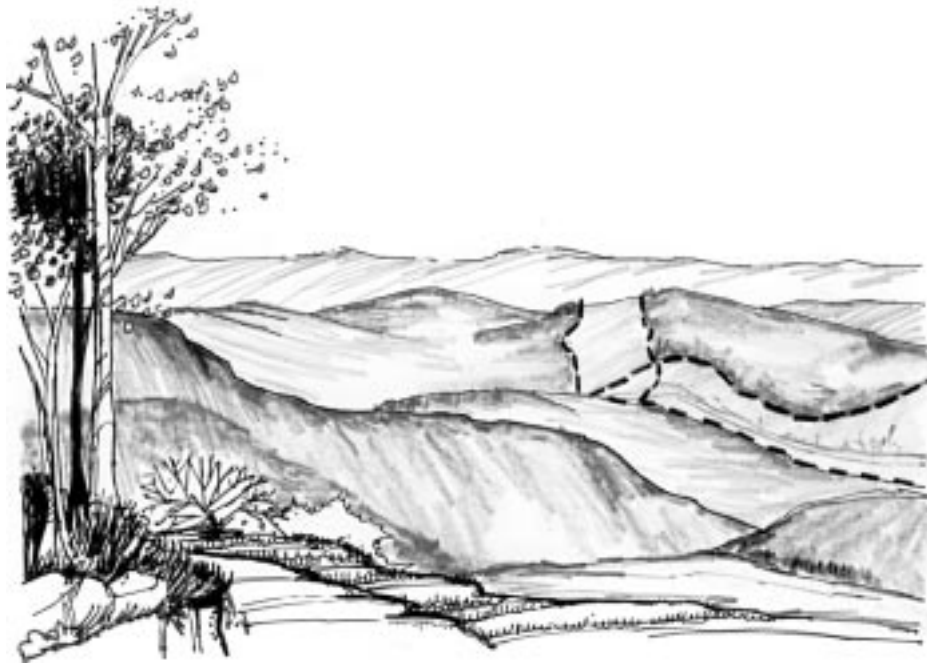


Figure 2. The site of planned activity is marked with a heavy broken line, showing irregular shapes, blending more naturally into the landscape.

the sunlight, nutrients, and moisture previously used by the harvested trees are available, tree seedlings, shrubs, wildflowers, and other herbaceous species fill spaces rapidly. These new sources of food and cover in turn attract a variety of insects, birds, and mammals. The leftover woody debris, or slash, protects young growth from too much light, strong winds, and hungry deer, and provides additional cover for wildlife. The cut site is soon transformed into a lush area active with new life. In the next

section we review how this understanding of forest renewal can be used to manipulate or remove vegetation to achieve various management objectives and how woodland aesthetics can be enhanced in the process.

Managing with Aesthetics in Mind

PLANNING AND CREATING ACCESS

Of all the factors influencing forest aesthetics, perhaps none is more important than how you choose to access your land. Trails and roads are the most direct way to experience

your woodland's beauty, but routes that are improperly planned and implemented also have the potential to detract greatly from your land's scenic value. Access routes range from temporary, narrow paths to permanent, paved roads; but in general, similar design principles apply to them all.

Design Considerations

Since almost all forms of forest access involve removing trees and other vegetation, the best access routes follow the natural contours of the land to reduce erosion and water

run-off problems. A poorly designed route, such as one that runs straight up and down a mountain, provides an easy path for water to follow. As water flows freely down the unobstructed path, it gains speed and power and sweeps soil particles from the road surface. This sediment is eventually carried into a stream or river. The accumulation of soil particles in the stream, known as sedimentation, clouds the water and has an adverse effect on aquatic life.

A preferable route is one that follows the contours of the land or zig-zags from top to bottom of a slope. Contours or zig-zag provide little opportunity for erosion to occur (Figure 3). Water following such a course slows where it is obstructed by vegetation and is eventually absorbed into undisturbed forest soils.

Erosion on forest roads or paths may also be reduced by incorporating water diversion features, such as water bars and culverts, into the design. By considering slope, aspect, and length, forest managers can carefully plan and maintain roads

and trails to avoid erosion and consequently minimize unsightly problems such as rutting.

Roads and trails that meander also provide a more direct aesthetic benefit—an element of mystery in the forest viewscape. Travelers along a winding road never know what is beyond the next turn. And what outdoor enthusiast doesn't enjoy rounding a bend to surprise a deer or flock of turkeys feeding along the roadside?

When planning access routes, it is helpful to consider the view. Driving or walking on forested roads sometimes becomes monotonous because vegetation is usually more dense along roadways. However, thinning some areas along roads increases visibility into the forest's depths. Instead of traveling the length of an enclosed corridor bordered by dense vegetation, people can experience more of what is contained within the forest. You may also vary roadside viewing by favoring a mix of hardwood and evergreen species. In fall, the orange, gold, and red hues of mixed hardwoods are particularly

brilliant next to the deep green of hemlock and spruce.

Another aspect of access to consider is controlling unwanted use of your trails and roads. You can restrict access during wet periods and reduce maintenance problems by placing gates or highly visible cables across access roads. Restricting access will also minimize wildlife disturbance, poaching, and littering.

Wildlife Viewing Considerations

To many landowners, the potential for viewing wildlife is a large part of a forest's scenic appeal. You can plan forest access to maximize wildlife observation by either adapting existing routes or developing a trail specific for easy, quiet access to a variety of sites where you may observe wildlife unobtrusively. The trail should form a loop beginning and ending in the same general, convenient location. Numerous bends and curves add the element of surprise and increase chances of flushing a grouse or catching a deer off guard. To maximize the variety of wildlife you may encounter, you



Figure 3. This access road follows the natural horizontal contour of the land and is well vegetated on both sides, thus minimizing water run-off and soil erosion.

PLANNING ACCESS WITH AESTHETIC CONSIDERATIONS

- Design roads and trails to follow natural contours.
- Keep slopes below 10 percent to minimize erosion and maintenance.
- Minimize the number of and extent of roads and trails and maximize their effectiveness.
- Avoid developing permanent roads in environmentally sensitive areas.
- Manage roadsides to enhance wildlife and visual qualities.
- Plan for regular road and trail maintenance.
- Consider installing gates or cables to control access.

should plan trails passing through diverse cover types and near key interest points such as wetlands or clumps of evergreens. Additional considerations and ideas are discussed in the Developing a Woodland Trail section of this publication.

Harvesting Considerations

Proper skid trail and logging road design and layout are very important to your forest's scenic value. The heavy equipment used in harvesting operations can compact the soil or allow severe erosion to begin unless precautions are taken. Harvesting during dry seasons or when the roads are frozen can reduce the risk of erosion and sedimentation. Logging roads seeded with native species such as bluestem, broom-sedge, switchgrass, Indian grass or other seed mixes will help stabilize soil, reduce erosion, and provide forage for wildlife. Well-planned and maintained roads are valuable assets. They increase the accessibility of the forest for recreation and other purposes and have potential for increasing future management options and income.

DEVELOPING A WOODLAND TRAIL

A woodland trail can offer your family decades of enjoyment and provide endless educational and recreational opportunities in the natural setting you know best. Creating a trail on your own property allows you to highlight those aspects of your woodland that capture your interest, whether that is a special view from a hilltop or a management area that has been particularly successful. Before you develop a trail plan, ask yourself the following questions:

1. *Why do I want to develop a trail?*
2. *How will it be used?*
3. *What are the physical land characteristics that this type of trail activity requires?*
4. *Who will use the trail?*
5. *How will the trail fit into the long-term management plan for the property?*

Deciding on a particular trail type and predicting the use it may receive can be a challenge. Trails range from flat, wide swaths of asphalt to little more than deer paths. Most likely, your ideal falls somewhere in between. A trail is best designed for one type of activity—if you plan a trail for biking or horseback riding, for example, the design should differ in its slope, surfacing material, and width from one intended for casual hiking. Some landowners develop a trail system to show various aspects of their woodlands to visitors. If you have an interest in forest ecology, for example, you might develop a trail to educate visitors about how diverse plant and animal life-forms interact and compete in a stream or marsh or along a forest's edge. If you are a very active land manager, you may want to highlight the natural features and managed areas of which you are most proud. Or you may be interested in a trail to increase wildlife viewing.

Setting clear objectives is paramount to achieving an effective and rewarding trail system. Professional consultants are available to help you plan, design, and construct a trail that meets your objectives. A consultant can help with selecting the area, choosing features to highlight, and identifying any constraints that might be present—such as steep slopes, water channels, and distance limitations. If one of your reasons for creating a trail system is to increase access to your land for management purposes, such as firewood cutting or timber management, a professional forester can help you incorporate these objectives in the design and layout stage.

Whatever type of trail you develop, you should always plan for regular and continuing maintenance. Over time, trails may wash out or become overgrown. Sometimes they are damaged through improper use. Incorporating regular trail maintenance into your schedule of management activities ensures that your trail system will continue to reward you in years to come. If you are interested in learning about cost-share opportunities for developing trails, contact your Bureau of Forestry service forester for more information. If you plan on expanding your trail system into access roads for later management activities, you may qualify for design and layout assistance under Stewardship Incentive Program (SIP) practice # 5, Soil and Water Protection. Actual trail construction may qualify for assistance under SIP #9, Forest Recreation Enhancement.

MANAGING SMALL FOREST OPENINGS

Cutting is often used as a tool to alter existing vegetative cover for various reasons. Creating small forest openings can enhance scenic value by providing you with the opportunity to observe a variety of plant and animal species taking advantage of the new habitat. You can also use such areas to learn more about your land's successional patterns.

Vistas

One way of enriching your enjoyment of your land's natural beauty is to remove selected trees to create a view (Figure 4). Pennsylvania's rolling ridges and valleys offer very scenic landscape perspectives that you may capitalize on if your woodlot has suitable topography. When you create a scenic vista, incorporate the same guidelines offered for access routes to minimize erosion and sedimentation. A resource professional can help you design and establish your forestland vista to ensure that it is well integrated into your other management objectives.

Wildlife Management Considerations

You can create small forest openings and seed them with native grasses to attract wildlife and provide increased opportunity for viewing wildlife. These areas produce forage for deer and seeds for birds and small mammals. In turn, small mammals attract birds of prey, such as hawks and owls. Insect life abounds in the tall grasses and provides food for wild turkey and ruffed grouse, particularly in summer when poults feed almost exclusively on insects. Consider designing and constructing a station or platform in or near the forest opening to enhance your wildlife-viewing enjoyment.

Log Landing Considerations

Log landings, areas cleared to prepare logs for transport, are another important type of forest opening. Because they are the center of activity, log landings are often affected more than other parts of the site. Properly chosen log landing sites help protect water quality. Always rely on a professional

forester's judgment to determine the best site for the landing and mark it clearly. The forester will decide where to place the landing based on the surrounding landscape, soil type, slope, distance to main roads, and the presence and types of water in the area. Include special instructions in the contract about how the landing should be used and retired at the end of the operation. Following a harvest, landings are sometimes seeded with grasses, birdsfoot trefoil, or other plants to stabilize soil, reduce erosion, or provide forage for wildlife. Throughout much of the state, adult wild turkey and poults frequent these sites to feed on the many insects that thrive there.

Carefully planned log landings provide variation in the viewscape by breaking up large expanses of forest. Periodically mowing a landing helps maintain its meadow stage for an indefinite period of time. Mowing should be restricted in the spring, however, to allow ground-nesting wildlife to rear their young without disturbance.



Figure 4. Removing just a few trees along the trail creates a scenic view of the valley below.

MANAGING FOREST OPENINGS WITH AESTHETIC CONSIDERATIONS

- Plan and execute cutting operations carefully to minimize negative impacts.
- Create scalloped edges or irregular indentations in forest openings rather than straight, rectangular edges.
- Consider retaining trees and other vegetation for their varied form, shape, blossom, autumn color, and wildlife value.
- Seed small cleared areas to attract wildlife; consider erecting a wildlife viewing station.
- Establish irregular, outlying clumps of trees to create a natural forest appearance.
- Favor varied species composition where practical.

INCORPORATING AESTHETICS INTO THE HARVESTING OPERATION

Working closely with a professional throughout both the planning stages and the actual operation will help minimize the negative visual impacts of logging. A forester can include provisions in the logging contract to reduce risk of injury to residual trees. For example, consider leaving comparatively undesirable trees (those with little commercial, wildlife, or aesthetic value) to serve as “bumpers” near turns in the skid trail to protect more valuable trees behind them (Figure 5). After the harvest, removing bumper trees, other trees that have damage, and trees that are “hung” in tree tops can lessen negative aesthetic impacts. Harvesting during winter reduces bark scarring on residual trees and minimizes the number of trees that may need to be removed.

Cultural landmarks often offer aesthetic focal points in the forest. Stone walls, old foundations, and charcoal hearths all spark people’s interest and speculation and offer the chance to explore your land’s history. In some instances, it is best to completely avoid historic features in a timber operation. However, when that is impossible, consider precautions to reduce harvest impacts. For example, if a skid trail crosses a stone wall, carefully disassemble the wall, place the stones nearby, and reconstruct the wall at the end of the operation.

Far from destroying a forest, proper harvesting operations can encourage its continual renewal. But sustaining a forest to meet your objectives over time ultimately depends on developing and implementing a plan to ensure that it occurs. A harvesting and regeneration plan must include considerations for species, timing, competing plants, deer pressure, and many other factors. Silvicultural methods such as intermediate, improvement, and regeneration cuts each help the forest remain healthy and productive in a different way. Discuss your aesthetic preferences with your consulting forester as you would your other management concerns. He or she will help you visualize

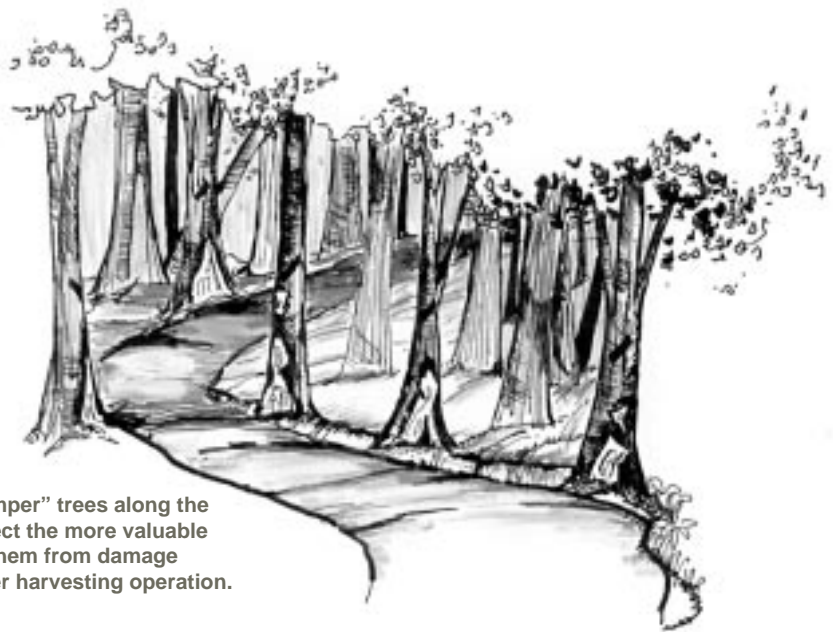


Figure 5. “Bumper” trees along the skid trail protect the more valuable trees behind them from damage during a timber harvesting operation.

what a particular harvesting technique will look like immediately after the harvest and also project how the cut site will likely change over time. (For more information see Forest Stewardship Bulletin #7, *Timber Harvesting: An Essential Management Tool*.)

When Benefits Conflict: Trade-offs

One common concern about harvesting is that it breaks up, or fragments, the landscape. Consider a situation in which a landowner wishes to cut enough trees to create a vista overlooking a scenic valley. What trade-offs would be necessary? If the opening were in an expansive forested area, it might increase habitat for early successional species and allow the landowners more wildlife viewing opportunities, in addition to providing the scenic vista. But if the surroundings are already mostly open, perhaps the vista wouldn’t be necessary at all.

Some people equate large trees with aesthetic value and fear that their loss takes away all of a forest’s beauty. But there are trade-offs in every action. Although timber harvests involve removing some large trees, the financial return from their sale may in part compensate for this aesthetic loss. The money earned in many cases is essential for continued land management. Income

generated from harvests allows landowners to build roads or improve wildlife habitat. It provides money to pay the taxes. Forest-generated income helps people retain land ownership, reducing the likelihood of forest fragmentation or permanent land use changes. The results are that more land remains forested, providing the aesthetic benefits we all appreciate.

It is also important to remember that not all large trees have to be removed in a timber harvest. Some of the largest, most visually interesting trees often have little timber value. These mature “wolf” trees, as they are called, are often large and gnarled, have low-hanging branches, and contain many cavities. They provide habitat for various cavity-nesting and insect-eating species and produce abundant amounts of fruit, nuts, or seeds which many species of wildlife depend upon. They also make great climbing trees for young children! Considering their wildlife value and aesthetic appeal, these stately and craggy giants are worth much more alive in the forest than at a sawmill.

Depending on your personal objectives, there may be some instances when you choose to sacrifice an aesthetic preference for some ecological benefit. For example, instead of removing slash after harvesting a stand, you may let it remain on the ground to protect new vegetation, recycle nutrients into the new stand, and provide wildlife

habitat. Or instead of removing dead trees because they look unattractive, you could leave them standing to provide invaluable habitat to cavity-nesting and insect-eating wildlife species. You may be sufficiently rewarded by seeing a pileated woodpecker alighting on a snag, knowing that you had a hand in retaining that particular part of its habitat.

It's important for landowners and forest users to understand that forests are dynamic and that manipulating vegetation through well-planned cutting can be a valuable resource management tool. Through

proper planning, aesthetic concerns can be incorporated into management decisions regarding recreational interests, wildlife habitat management, timber harvesting, or other forestland objectives. Both directly and indirectly, all of us benefit from the aesthetic value of forests. Forest landowners are fortunate in having the ability to directly experience and enhance their land's natural beauty. Through stewardship, we can continue to pass on the legacy of natural beauty that will always be a valued aspect of our heritage and an integral part of our connection to the natural world.

*Beauty is before me
And beauty is behind me
Above and below me hovers the beautiful
I am surrounded by it
I am immersed in it
In my youth I am aware of it
And in old age I shall walk quietly
The beautiful trail.*

—Native American Prayer

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